EUTROPHICATION STATUS OF THE INANAM-LIKAS RIVER BASIN (ILRB), KOTA KINABALU, SABAH

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ABSTRACT

EUTROPHICATION STATUS OF THE INANAM-LIKAS RIVER BASIN (ILRB), KOTA KINABALU, SABAH

Freshwater ecosystem is a precious asset and support vital wildlife habitat such as fish, plants and animals. Healthy river can easily be identified by a diverse population of fish and mussels. Therefore, the evaluation of eutrophication status at different types of land use is important to see the status of the current river. In this study, the Carlson's Trophic State Index was measured by using Chlorophyll *a* and the Transparency as indicator to determine the water quality of the river. Besides, the Phosphorus (P) concentration along the river basin also been monitored to see the relationship between Phosphorus concentration, TSI Chlorophyll *a*, Phosphorus concentration and TSI Transparency. There are 6 stations with different types of land used that were chosen in the Inanam Likas River Basin (ILRB) with three replicates for each station. The sampling was conducted from January 2018 until May 2018 and a three weeks interval for each sampling. The values for Chlorophyll *a* was obtained by using the Hydrolab Multiparameter Model DS5X and the Secchi disk was used to determine the transparency. The preservation method for phosphorus concentration was recommended by APHA (2005). Overall, the status of Inanam-Likas river basin was in eutrophic class; where tourism area, poultry, oil plantation and villagers were classified as eutrophic, while the industrial and recreational area were classified as hypertrophic. Kruskal-Wallis test showed that there was a significant difference between different types of land used with TSI Transparency (KW χ^2 = 14.51, df = 5, $p < 0.01$) and significant difference for the TSI Chl *a* (KW χ^2 = 16.25, df = 5, $p < 0.01$). Meanwhile, the Spearman's rho correlation showed positive correlatiion between TSI Chl *a* and Phosphorus concentration (N = 18, r = 0.646, $p < 0.01$) and between TSI Transparency and Phosphorus concentration (N = 18, r = 0.624, $p < 0.01$). As a conclusion, the effects of eutrophication to the river are sedimentation which in turn will cause primary succession. This condition will limit the river's capacity and limit access to safe drinking water.